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EXAMINER	
PATEL, DHARTI HARIDAS	
ART UNIT	**PAPER NUMBER**
2836	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/718,021	TAYLOR, BRIAN J.	
	Examiner	Art Unit	
	Dharti H. Patel	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34 and 51-75* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34 and 51-75* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-9, 12-21, 24-34, 51-56, and 59-63 are rejected under 35 U.S.C. 102(e) as being anticipated by Knox et al., Publication No. 2004/0252421.

With respect to Claim 1, Knox discloses a controller for a machine [Fig. 1 digital programmable motor overload protector 1], comprising: a machine mountable base [Fig. 3 housing base 41; par. 0020, the modular base housing portion] comprising a motor protection device [Fig. 3 the Digital Signal Processor DSP 55 in housing 46; par. 0008]; and a modular control unit [Fig. 5 modular control unit 2 containing microcontroller 75; par. 0104] replaceably mountable to the machine mountable base [par. 0030; all components are mounted to housing base 41 and are modularized/replaceable], wherein the modular control unit comprises control circuitry [modular control unit 2 contains microcontroller 75] configured to control the machine [the circuitry of microcomputer 75 allows the user to enter control commands and receive status updates of the motor being

controlled- par. 0104-0109. The machine being controlled is the low voltage motor mentioned in paragraph 0002].

With respect to Claim 2, Knox discloses the motor protection device comprises a short-circuit protective device [Fig. 4 trip contact relay 66 is a short circuit protective device that works in conjunction with the DSP; par. 0101. Line fuses 68 also provide short circuit/overload protection par. 0102].

With respect to Claim 3, Knox discloses the short-circuit protective device comprises an instantaneous trip [par. 0101, no time delay in tripping is specified, therefore the trip occurs instantaneously].

With respect to Claim 4, Knox discloses the short-circuit protective device comprises a magnetic circuit breaker [Fig. 4 trip contact 66 comprises a magnetic coil].

With respect to Claim 5, Knox discloses the motor protection device comprises a disconnect device [par. 0101; disconnect occurs via trip contact relay 66 which controls the on/off of the users motor contactor/circuit breaker].

With respect to Claim 6, Knox discloses the disconnect device comprises a local lockout [par. 0101- failsafe trip contact control circuit 65 electrically resets the users motor contactor/circuit breaker if it senses a failure in the DSP; and par. 0095 lines 16-22- reset supervisor 64 electrically locks out the DSP if operating conditions are unreliable; par. 0147- software will lockout the trip contacts from being reset].

With respect to Claim 7, Knox discloses the modular control unit comprises an overload protection device and a contactor [Fig. 4 trip contact relay 66 is an overload protection device that works in conjunction with the DSP 55, par. 0101].

With respect to Claim 8, Knox discloses the modular control unit comprises a programmable electronic overload [the device is a digital programmable motor overload relay; par. 0002; par. 0109 programming inputs entered through interface keypad 6].

With respect to Claim 9, Knox discloses the modular control unit comprises an electromagnetic contactor [Fig. 4 trip contact relay 66 with coil].

With respect to Claim 12, Knox discloses the modular control unit comprises a motor connection terminal [Fig. 3 trip contacts 33 connects to the users motor contactor/circuit breaker circuit].

With respect to Claim 13, Knox discloses the machine mountable base comprises a network terminal [par. 0147 lines 8-11; par 0027].

With respect to Claim 14, Knox discloses the machine mountable base comprises at least one sensor terminal [Fig. 3 terminal 36 connecting to current transformer 37; par. 0090].

With respect to Claim 15, Knox discloses the machine mountable base comprises at least one actuator terminal [Fig. 3 trip contacts 33].

With respect to Claim 16, Knox discloses a motor controller [Fig. 1 digital programmable motor overload protector 1], comprising: a motor mountable base

[Fig. 3 housing base 41; par. 0020 modular base housing portion] comprising a short-circuit tripping disconnect [Fig. 4 trip contact relay 66 is a short circuit protective device that works in conjunction with the DSP 55]; and a replaceable control unit [Fig. 5 modular control unit 2 containing microcontroller 75; par. 0104; a module is replaceable] removably coupled to the motor mountable base, wherein the replaceable control unit comprises control circuitry [modular control unit 2 contains microcontroller 75] configured to control a motor [the circuitry of microcomputer 75 allows the user to enter control commands and receive status updates of the motor being controlled- par. 0104-0109. The machine configured to be controlled is any of the low voltage motors mentioned in paragraph 0002].

With respect to Claim 17, Knox discloses the short-circuit tripping disconnect comprises a magnetically tripping disconnect [Fig. 4 trip contact 66 comprises a magnetic coil].

With respect to Claim 18, Knox discloses the short-circuit tripping disconnect comprises a disconnect lockout [par. 0101- disconnect occurs via trip contact relay 66 which controls the on/off of the users motor contactor/circuit breaker. Failsafe trip contact control circuit 65 electrically resets the users motor contactor/circuit breaker if it senses a failure in the DSP; and par. 0095 lines 16-22- reset supervisor 64 electrically locks out the DSP if operating conditions are unreliable; par. 0147- software will lockout the trip contacts from being reset].

With respect to Claim 19, Knox discloses the motor mountable base comprises at least one communication terminal [par 0027].

With respect to Claim 20, Knox discloses that the at least one communication terminal comprises a machine network terminal adapter to facilitate networking of a plurality of machine components [par. 0027].

With respect to Claim 21, Knox discloses the replaceable control unit comprises an adjustable overload [the device is a digital programmable motor overload relay and therefore adjustable; par. 0002; par. 0109 programming inputs entered through interface keypad 6] and a contactor [Fig. 4 trip contact relay 66].

With respect to Claim 24, Knox discloses the replaceable control unit comprises at least one monitoring device [Fig. 3 terminal 36 connecting to current transformer 37; par. 0090].

With respect to Claim 25, Knox discloses the replaceable control unit comprises at least one diagnostic device [par. 0212 Table U3- FAIL DIAG code signals internal DSP diagnostic failure].

With respect to Claim 26, Knox discloses the replaceable control unit comprises at least one manual control mechanism [par. 0147 critical failure will result in a lockout. Par. 0215 Table U6 commands UAR and OAR- manual reset is required to clear the trip, Fig. 1 button 7, par. 0015].

With respect to Claim 27, Knox discloses a controller [Fig. 1 digital programmable motor overload protector 1] for a machine system [the machine system is the motor, its subcomponent parts, and the load the motor is driving], comprising: a modular control unit [Fig. 5 modular control unit 2 containing

microcontroller 75; par. 0104] replaceably mountable to an on-machine motor protection base [par. 0030; all components are mounted to housing base 41], wherein the modular control unit comprises at least one motor control device [modular control unit 2 contains microcontroller 75, which protects/controls the motor] operable with at least one motor protection device [Fig. 3 the Digital Signal Processor DSP 55 in housing 46; par. 0008; par. 0095 lines 3-5]; of the on-machine motor protection base, wherein the modular control unit comprises control circuitry [modular control unit 2 contains microcontroller 75 which is the circuitry that allows the user to interface with the motor being controlled/protected] configured to control at least one machine [the motor being controlled/protected, par. 0002] in the machine system [the machine system is the is the combination of the motor, its subcomponent parts, and the load that it drives].

With respect to Claim 28, Knox discloses the on-machine motor protection base [Fig. 3 housing base 41; par. 0089].

With respect to Claim 29, Knox discloses the modular control unit is selected from a group consisting of a soft start motor controller, a variable frequency motor drive, and an adjustable overload protection device [the device is a digital programmable motor overload relay and is therefore adjustable; par. 0002; par. 0109 programming inputs entered through interface keypad 6].

With respect to Claim 30, Knox discloses the modular control unit comprises a machine network terminal adapter to facilitate networking of a plurality of components of the machine system [par. 0027].

With respect to Claim 31, Knox discloses a controller [Fig. 1 digital programmable motor overload protector 1] for a machine system, comprising: an on-machine base [Fig. 3 housing base 41; par. 0020 modular base housing portion] comprising a machine protection device [Fig. 3 the Digital Signal Processor DSP 55 in housing 46; par. 0008]; and a selectable control unit [Fig. 5 modular control unit 2 containing microcontroller 75; par. 0104. Microcontroller 75 is selectable because it allows the user to control the motor or request its status] replaceably mountable to the on-machine base, wherein the on-machine base and the selectable control unit are cooperative to provide desired on-machine controllability [DSP 55 of Fig. 4 in conjunction with microcontroller 75 of Fig. 5], wherein the selectable control unit comprises control circuitry [modular control unit 2 contains microcontroller 75 which is the circuitry that allows the user to interface with the motor being controlled/protected] selected for a desired machine [the circuitry of microcomputer 75 allows the user to enter control commands and receive status updates of the motor being controlled- par. 0104-0109. The machine being controlled/protected the low voltage motor mentioned in paragraph 0002].

With respect to Claim 32, Knox discloses the machine protection device comprises a magnetically tripping disconnect [Fig. 4 trip contact relay 66 is an magnetic trip device that works in conjunction with the DSP 55, par. 0101].

With respect to Claim 33, Knox discloses the selectable control unit is selected from a group consisting of a soft start machine controller, a variable frequency machine drive, and an overload protection device [the device is a digital programmable motor overload relay; par. 0002; the microcontroller 75 has a primary function of protection].

With respect to claim 34, Knox discloses a controller [Fig. 1 digital programmable motor overload protector 1] for a system of distributed machines [the system of distributed machines is the motor, protector/controller 1, the motor's subcomponents, and the load being driven], comprising a machine mountable base [Fig. 3 housing base 41; par. 0020 modular base housing portion], comprising a short-circuit protective device [Fig. 3 the Digital Signal Processor DSP 55 in housing 46; par. 0008], and a disconnect device, and a modular control unit [Fig. 5 modular control unit 2 containing microcontroller 75; par. 0104] replaceably mountable to the machine mountable base [par. 0030], wherein the module control unit comprises control circuitry [modular control unit 2 contains microcontroller 75 which is the circuitry that allows the user to interface with the motor being controlled/protected] configured to control at least one machine in the system of distributed machines [The machine is the motor being protected, paragraph 0002. The motor is part of a system of distributed machines

comprising the motor, protector/ controller 1, the motor's subcomponents, and the load being driven].

With respect to claim 51, Knox discloses a machine [Fig. 1 digital programmable motor overload protector 1, and the motor it is mounted to], comprising: a motor; and a motor controller mounted to the motor, comprising: a modular base comprising motor protection circuitry; a modular control unit comprising motor control circuitry cooperatively operable with the motor protection circuitry, wherein at least one of the modular base and the modular control unit is selectively replaceable, and wherein the control circuitry is configured to control the motor [the limitations of this claim have previously been met by the limitations of the preceding claims 1, 16, 27, and 31].

With respect to claim 52, Knox discloses that the short-circuit protective device comprises an instantaneous trip [par. 0101, no time delay in tripping is specified, therefore the trip occurs instantaneously].

With respect to claim 53, Knox discloses the short-circuit protective device comprises a magnetic circuit breaker [Fig. 4 trip contact 66 comprises a magnetic coil].

With respect to claim 54, Knox discloses a motor mounted to the machine mountable base [Fig. 3 housing base 41; par. 0089].

With respect to claim 55, Knox comprises a machine system coupled to the motor as disclosed in Fig. 1.

With respect to claim 56, Knox discloses that the short-circuit protection device and the disconnect device are replaceable mountable to the machine mountable base [par. 0030].

With respect to Claim 59, Knox discloses the control circuitry comprises an overload device and a contactor [Fig. 4 trip contact relay 66 is an overload protection device that works in conjunction with the DSP 55, par. 0101].

With respect to Claim 60, Knox discloses the modular control unit comprises a motor connection terminal [Fig. 3 trip contacts 33 connects to the users motor contactor/circuit breaker circuit].

With respect to Claim 61, Knox discloses the machine mountable base comprises a network terminal [par. 0147 lines 8-11; par 0027].

With respect to Claim 62, Knox discloses the machine mountable base comprises at least one sensor terminal [Fig. 3 terminal 36 connecting to current transformer 37; par. 0090].

With respect to Claim 63, Knox discloses the machine mountable base comprises at least one actuator terminal [Fig. 3 trip contacts 33].

With respect to claims 64, 72 and 74 (new), Knox discloses that the modular control unit comprises an output connector configured to couple with the machine/at least one of the machines [Fig. 2, the output connector is on the bottom surface of user interface 2, which detachably connects to user interface pedestal 22 in the remote mount configuration, par. 0087 and 0088. The male

portion of the connector is shown in Fig. 2 as comprising 16, 23, and 24. The motor being controlled/protected is the "at least one of" the machines].

With respect to claims 65, 69, 73, and 75 (new), Knox discloses that the modular control unit is selected from and interchangeable with a plurality of modular control units, each having different control circuitry [one removable user interface 2 can be switched out and replaced with another identical unit if it fails, which is one of the purposes of modularization. Each user interface 2 is a self-contained module, which means that each has its own "different control circuitry" from another].

With respect to claim 66 (new), Knox discloses that the replaceable control unit comprises an output connector configured to couple with the motor [the output connector is coupled to the motor via transmission through the user interface umbilical 21, Fig. 2].

With respect to claims 67 and 71 (new), Knox discloses that the replaceable/selectable control unit is selected from and interchangeable with a plurality of replaceable/selectable control units, each having different control circuitry [one removable user interface 2 can be switched out and replaced with another identical unit if it fails, which is one of the purposes of modularization. Each user interface 2 is a self-contained module, which means that each has its own "different control circuitry" from another. If you can select a replacement user interface module 2 to replace a damaged one, then it is "selectable"].

With respect to claims 68 and 70 (new), Knox discloses that the modular/selectable control unit comprises an output connector configured to couple with the at least one machine via a cable [Fig. 2, cable 19].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103[a] which forms the basis for all obviousness rejections set forth in this Office action:

[a] A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 10-11, 22-23, and 57-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knox et al, Publication No. US 2004/0252421, in view of Hollenbeck, Patent No. 5,557,182.

With respect to Claims 10, 22, and 58, Knox teaches the controller of Claims 1 and 16 respectively, but does not teach a soft start machine controller. Knox's programmable device is implicitly capable of controlling/protecting any motor in general [par. 0002; par 0010], including a soft start motor controller, but this is not elaborated upon in the specification.

Hollenbeck teaches a control unit that comprises a soft start machine controller [col. 12 lines 13-14].

Knox and Hollenbeck are analogous means of controlling motors. It would have been obvious to one of ordinary skill in the art at the time the invention was made to specify soft start control capability to Knox for the purpose of explicitly

bringing to the users attention that Knox's device is capable of controlling/ protecting all motors, including ones with soft start control. Soft start capability is desirable to prevent stressing the power supply as well as the motor windings from sudden loading, which is well known to shorten the lifespan of electrical equipment.

With respect to Claims 11, 23, and 57, Knox teaches the controller of Claims 1 and Claims 16 respectively, but does not teach a variable frequency machine drive. Knox's programmable device is implicitly capable of controlling/protecting any motor in general [par. 0002; par 0010], including a variable frequency machine drive. However, this is not elaborated upon in the specification.

Hollenbeck teaches a control unit for a motor that comprises a variable frequency machine drive [col. 4 lines 47-52].

Knox and Hollenbeck are analogous means of controlling motors. It would have been obvious to one of ordinary skill in the art at the time the invention was made to specify variable frequency capability to Knox for the purpose of explicitly bringing to the users attention that Knox's device is capable of controlling/ protecting all motors, including ones with variable frequency machine drives. Variable frequency machine drives are a well known and desirable means of controlling induction motors because this is an efficient means of control that results in less wasted power.

Response to Arguments

Applicant comments on page 11 of REMARKS that Knox's [U.S. 2004/0252421] DSP 55 cannot be both the motor protection device and the control circuitry. The examiner notes that the DSP contains circuitry that is controlled by microcontroller 75 of removable user interface 2; however, the examiner cites *microcontroller 75 in removable user interface 2* as meeting applicant's limitation "control circuitry configured to control the machine," as recited in claim 1.

The examiner finds that ALL the limitations as recited in claim 1 are found in Knox- the machine mountable base is housing base 41, Fig. 3. Housing base 41 has a motor protection device- DSP 55, par. 0095, 0096. The recited "modular control unit" is met by removable user interface 2 containing microcontroller 75- par. 0104, which allows the user to control the motors by inputting the appropriate commands.

Contrary to the applicant's repeated arguments on pages 11-20, microcontroller 75 in the removable user interface 2 is the control circuitry configured to control the machine, because it allows the user to enter control commands through the user interface 2 in order to control the motor. This is expressly stated in pars. 0103-0109. As the name implies, the purpose of a *user interface* is to allow a user to interface (i.e. monitor and control) with a motor. If the user enters a command into the user interface to start the motor, or to adjust a protection setting, or to shut down the motor, then the command is sent from

microcontroller 75 to digital signal processor DSP 55, which in turn controls the motor, does this not constitute "control" in the narrowest definition of the term?

Applicant comments on page 21, with respect to the 35 USC 103 combinations made between Knox in view of Hollenbeck [Patent no. 5557182] that the examiner has confused the type of motor being controlled with the limitations the applicant recites for the controllers. There is no confusion: Knox discloses a modular motor controller/protector designed to be mounted to a motor. Knox's controller/protector is generic with respect to the motor, meaning it can apply to any type of motor commonly found in the art. Additionally, Knox's controller/protector is programmable [par. 0008], which means it can be adapted to be used with different types of motors. The cited features "soft start machine controller" and "variable frequency machine drive" denotes an ability of the controller, but also denotes that the motor being controlled has those abilities. Since Knox's programmable controller/protector is generic in nature, Hollenbeck is used to provide the teaching that both a controller and a motor capable of these features are well known in the art. The benefits of incorporating the capabilities of soft start and variable frequency control are to prolong the life of the equipment, and provide a more efficient means of motor control (varying the frequency wastes less energy since heat is not dissipated via resistive current control means), as stated above. Both of these benefits are also well known in the art.

Applicant further comments that replacing the user interface module of Knox with a soft start or variable frequency capabilities would render Knox's controller inoperable. The objective of the combination of Knox in view of Hollenbeck is not to *replace* one controller with another; rather it is to incorporate the desirable features of Hollenbeck's soft start and variable frequency into Knox's generic controller, for the benefits as stated above. As such, they are perfectly compatible.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dharti H. Patel whose telephone number is 571-272-8659. The examiner can normally be reached on 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2800, Ext. 36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DHP
01/31/2007

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